



SUPERIOR AI EDGE COMPUTING SYSTEM

# RCO-6000-CFL-4NS

Superior AI Edge Computing System W/ LGA 1151 for Intel 8th/9th Gen CPU & Q370 PCH, 4 Bay U.2 15mm, 1x PCIe x4 (1-lane)



## FEATURES

- LGA 1151 socket for 8<sup>th</sup>/9<sup>th</sup> Gen. Intel® CFL-R S Processor Pentium® / Celeron® Desktop Processor
- Intel® Q370 chipset
- 2x 260-pin DDR4 SODIMM. Max. up to 64GB
- Triple Independent Display by 1x DVI-I and 2x DisplayPort
- 2x Intel® GbE supporting Wake-on-LAN and PXE
- 2x Removable 2 Bay NVMe SSD Module with RAID 0, 1 (Support H=15mm)
- 4x 2.5" SATA HDD Bay and 2x mSATA with RAID 0, 1, 5, 10 support
- 1x M.2 (M Key, PCIe x4, 2280, Support NVMe)
- 1x M.2 (E Key, PCIe x2, 2230, USB 2.0, Support CNVi), 2x SIM socket
- 9 to 48VDC Wide Range Power Input Supporting AT/ATX Mode
- Wide Operating Temperature [-25°C to 60°C]
- Power ignition management

## SPECIFICATIONS

### System

#### Processor

Support 8<sup>th</sup>/9<sup>th</sup> Gen Intel® CFL-R S Processor (LGA 1151, 65W/35W TDP)

- Intel® Core™ i7-9700E, 8 Cores, 12MB cache, up to 4.4 GHz
- Intel® Core™ i5-9500E, 6 Cores, 9MB Cache, up to 4.2 GHz
- Intel® Core™ i3-9100E, 4 Core, 6MB Cache, 3.7 GHz
- Intel® Core™ i7-9700TE, 8 Cores, 12MB cache, up to 3.8 GHz
- Intel® Core™ i5-9500TE, 6 Cores, 9MB Cache, up to 3.6 GHz
- Intel® Core™ i3-9100TE, 4 Core, 6MB Cache, 3.2 GHz
- Intel® Core™ i7-8700T, 6 Cores, 12MB cache, up to 4.0 GHz
- Intel® Core™ i5-8500T, 6 Cores, 9MB Cache, up to 3.5 GHz
- Intel® Core™ i3-8100T, 4 Cores, 6MB Cache, 3.1 GHz
- Intel® Pentium® G5400T, 2 Cores, 4MB Cache, up to 3.1 GHz
- Intel® Celeron® G4900T, 2 Cores, 2MB Cache, up to 2.9 GHz

System Chipset Intel® Q370 Express Chipset

LAN Chipset GbE1: Intel I219LM (Support Wake-on-LAN and PXE)  
GbE2: Intel I210-AT (Support Wake-on-LAN and PXE)

Audio Codec Realtek ALC888S

System Memory 2x 260-Pin DDR4 2400/2666MHz SODIMM.  
Max. up to 64GB (Un-buffered and Non-ECC)

BIOS AMI 256Mbit SPI BIOS

Watchdog Software Programmable Supports 1-255 sec. System Reset

TPM TPM 2.0

### Display

Graphics Intel® UHD Graphics 610/630

DVI 1x DVI-I, support resolution 1920 x 1200

DisplayPort 2x DisplayPort, support resolution 4096 x 2304

Multiple Display 3 Display interfaces

### Storage

SSD/HDD 2x Internal 2.5" SATA HDD Bay (support H=9.5mm)  
2x Removable 2.5" SATA HDD Bay  
(support H=7mm, hot-swappable) Support RAID 0, 1, 5, 10

NVMe 2x Removable 2 Bay NVMe SSD Module with RAID 0, 1  
support (Support H=15mm)

mSATA 1x mSATA (Shared by 1x Mini PCI Express)

M.2 1x M.2 (M Key, PCIe x4, 2280, Support NVMe)  
1x M.2 (E Key, PCIe x2, 2230, USB 2.0, Support CNVi)

SIM Socket 2x External SIM socket

### Expansion

Mini PCI Express 2x Full-size Mini PCIe (1x shared by 1x mSATA)

PCIe 1x PCIe x4 (x1 Lane)

4-Port GbE (Optional) 4-port GbE module with Intel® I350-AT4 Chipset,  
RJ-45 or M12 connector (PoE optional)  
Occupied one Universal I/O Slot

2-Port GbE (Optional) 2-Port RJ45 10GbE with Intel X710-AT2 Chipset  
Occupied one Universal I/O Slot

4-Port USB (Optional) 4-Port USB with Renesas uPD720201K8 host controller  
Occupied one Universal I/O Slot

5G (Optional)

1x M.2 for 5G (B Key, PCIe x4, USB 3.0, 3042/3052)  
Including 2x SIM socket, 1x SIM switch  
Occupied one Universal I/O Slot

### I/O

COM 4x RS-232/422/485 ; 2x RS-232/422/485 (internal)

USB 4x USB 3.2 Gen 2 (10 Gbps) ;  
5x USB 3.2 Gen 1 (5 Gbps, internal) ;  
1x USB 3.2 Gen 1 header (5 Gbps, internal)

LAN 2x RJ45

Audio 1x Mic-in, 1x Line-out

DIO 8 in / 8 out (Isolated)

Universal I/O Bracket 1x Universal I/O Bracket (By mini PCIe interface)

Others 5x WiFi Antenna Holes  
1x Power Switch, 1x AT/ATX Switch, 1x Remote Power On/Off  
1x PC/Car Mode Switch, 1x Delay Time Switch  
1x Removable CMOS Battery

Windows Windows 10

Linux Linux kernel 5.X

### Power

Power Mode AT, ATX

Power Supply Voltage 9-48VDC

Power Ignition Sensing Power Ignition Management

Power Connector 3-pin Terminal Block, 4-pin Terminal Block for Storage  
(12V requires 4-pin terminal block)

Power Adaptor Optional AC/DC 24V/9.2A, 220W  
Optional AC/DC 24V/11.27A, 280W

Power Protection OVP [Over Voltage Protection]; OCP [Over Current Protection]  
Reverse Protection

### Environment

Operating Temp. -25°C to 60°C (35W /65W CPU)

Storage Temp. -30°C to 85°C

Relative Humidity 10% to 95% (non-condensing)

Vibration With SSD: 3 Grms, 5 - 500 Hz, 0.5 hr/axis  
With HDD: 1 Grms, 5 - 500 Hz, 0.5 hr/axis

Shock With SSD: 20G, half sine, 11ms

Standards / Certification CE, FCC Class A, E-Mark,  
EMC Conformity with EN 50155, EN 50121-3-2

### Physical

Construction Extruded Aluminum with Heavy Duty Metal

Dimension 261 [D] x 240 [W] x 168 [H]

Weight 10.1 kg

Mounting Wall Mounting

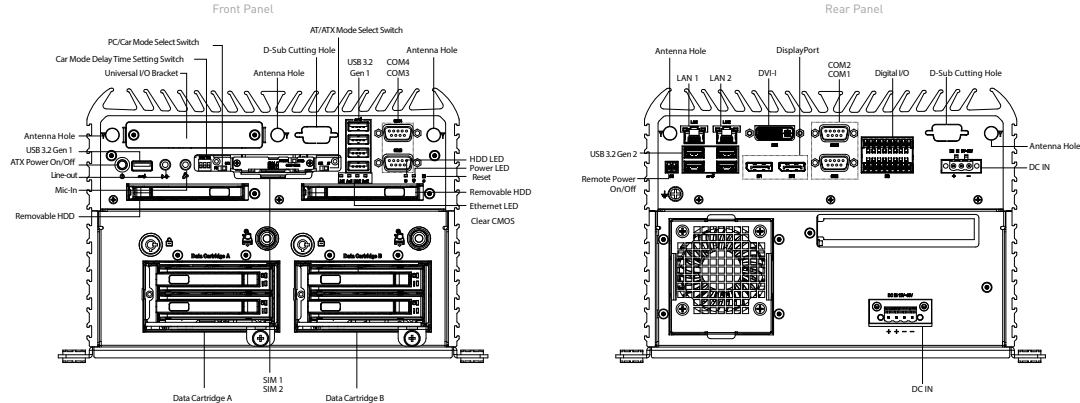
\* For 8<sup>th</sup>/9<sup>th</sup> CPUs configured to run at 65W, operating temperatures will be limited to 60°C.

\*\* 65W CPUS may experience thermal throttling depending on extreme application workloads; this is also due to an increase in the physical CPU cores from the Intel silicon (up to 8 cores). Please note, this does not indicate system malfunction or problems in the fanless design. Please consult our embedded engineers for the best configuration to match your application requirements.

\*\*\* All specifications and photos are subject to change without notice.

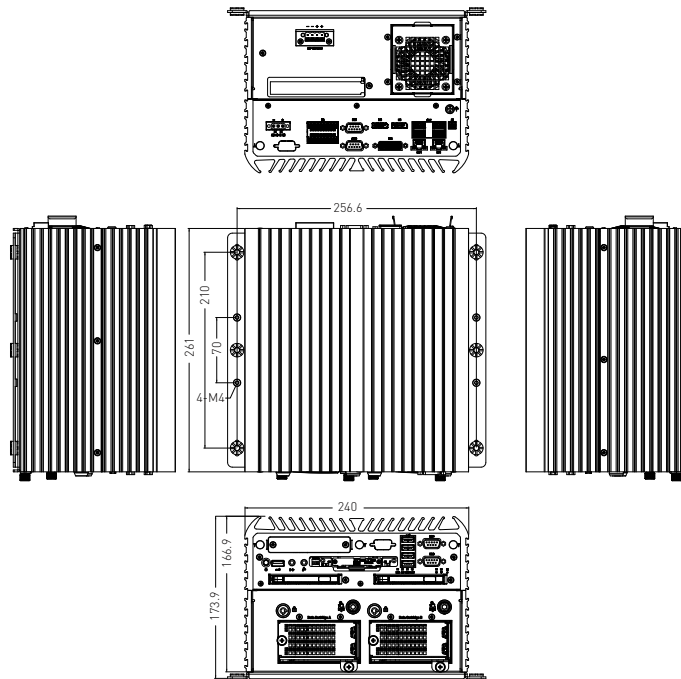
# RCO-6000-CFL-4NS

## EXTERNAL I/O MECHANICAL LAYOUT



## DIMENSION

Unit: mm



## ORDERING INFORMATION

| MODEL NO.   | DESCRIPTION                                                             |
|-------------|-------------------------------------------------------------------------|
| 1-E09A22102 | Adapter AC/DC 24V 9.2A 220W with 3pin Terminal Block Plug 5.0mm Pitch   |
| 1-E09A22801 | Adapter AC/DC 24V/11.67A 280W with 3pin Terminal Block Plug 5.0mm Pitch |
| 1-TPCD00005 | Power Cord, 3-pin US Type, 180cm                                        |
| 1-TPCD00002 | Power Cord, European Type, 180cm                                        |
| 1-TPCD00001 | Power Cord, 3-pin UK Type, 180cm                                        |

## PACKING LIST

- 1x RCO-6000-CFL-4NS Series Embedded System
- 1x Accessory Kit
- 1x Wall Mount Kit
- 1x DVI to VGA Adapter

## AVAILABLE MODELS

| MODEL NO.        | DESCRIPTION                                                                                                             |
|------------------|-------------------------------------------------------------------------------------------------------------------------|
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## Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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